LG

Super Multi DVD Rewriter

Owner's Manual

To fully enjoy all the features and functions of your product, please read this owner's manual carefully and completely.



English

Deutsch

Français

Italiano

Español

Português

GH22

⚠ **CAUTION** : The laser used in the Super Multi DVD Rewriter can damage your eyes. Do not attempt to open the cover. To reduce the risk of electric shock, do not remove the cover (or back). There are no user-serviceable parts inside. Refer servicing to qualified service personnel.
Use of controls or performance of procedures other than those specified herein may result in hazardous radiation exposure.

⚠ **WARNING** : To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

Industry Canada requirement

This class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

FCC COMPLIANCE STATEMENT

Note : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an Authorized Service Center for help.

- FCC WARNING
  Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This Super Multi DVD Rewriter is for use only with UL listed personal computers that have installation instructions detailing user-installation of card cage accessory.

This product is manufactured to comply with the radio interference requirements of EEC Directive 2004/108/EC, and Low Voltage Directive 2006/95/EC.

CAUTION : CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.

ADVARSEL : KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.

ADVARSEL : KLASSE 3B SYNLING OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPENS. UNNGÅ EKSPONERING FOR STRÅLEN.

VARNING : KLASSE 3B SYNLING OCH OSYNLIG LASERSTRÅLNING NÄR DENNAL DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG.

VARO! : KURSSI 3B NÄKYVÄ JA NÄKYMÄTÖN AVATTAESSA OLET ALTTIINA LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEN.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT
CLASE 1	PRODUCTO LÁSER
CLASSE 1	PRODOTTO LASER

The appliance is not intended for use by young children or infirm persons without supervision.

- Microsoft® and Windows® are trademarks registered in the United States and other countries by the Microsoft Corporation.
- DVD Logo is a trademark of DVD Format/Logo Licensing Corp., registered in U.S., Japan and other countries.
- The company names and product names written in this manual are trademarks or registered trademarks of the respective companies.

Contents

Important Precautions

Follow these precautions when handling the drive or discs.

- Please take notice that the manufacturer of this equipment does not offer any warranty against data loss due to inappropriate installation or handling, or direct or indirect damages.
- Please take notice that the manufacturer will bear no responsibility for direct or indirect damages caused by the use of this product or its malfunction.
- Please take notice that the manufacturer will bear no responsibility for damage to data caused by this product.
- Please backup (copy) all important data as a protection against data loss.
- Avoid placing the drive in a location subject to:
  - high humidity, high temperature, excessive dust, mechanical vibration, direct sunlight

We recommend using the drive in a horizontal or vertical position. Do not use it in tilted position.

- Don't move the drive suddenly from a cold place to a warm one or raise the room temperature suddenly. Condensation may occur, causing abnormal operation.
- Make sure to remove the disc before moving the drive. The disc may become damaged, causing data loss.
- Be careful to prevent foreign objects, such as liquids or metal, from entering the drive. In case a foreign object enters the drive, please consult the dealer where the drive was purchased.
- Don't interrupt the electric power while the drive is operating.
- Please pay attention to handling Electrostatic Sensitive Devices, you may use anti-static products such as wrist straps, heel straps, mats to protect your body from electrostatic.

Features

- Serial ATA interface.
- Power tray loading and ejection of disc. (The disc can also be ejected manually.)
- Combination CD-R/RW, DVD-R/RW, DVD-R DL, DVD+R/RW, DVD+R DL, DVD-RAM Drive functions into one drive.
- Supports Region playback control Phase II.
- Automatic buffer underrun error prevention technology.
- Supports LightScribe Direct Label Printing Technology - *Optional.

* You can use a variety of Drive

	GH22LS40	**GH22NS40**
LightScribe	Supported	Not Supported

System Environment

Computer

This unit can be operated in the system environment explained here.

System requirements	CPU: Motherboard that supports Serial ATA. (Recommended Pentium IV 3.2GHz or higher.) RAM:512MB or higher.
VGA Card Memory	128MB or greater.
Hard disk	20GB or more free space. (The free space needed for writing depends on the quantity of data.)
Interface	Serial ATA
Drive bay	5.25-inch half-height bay required
Power	+5V/+12V power socket required
Software Required OS	Windows Vista(X86, X64)/Windows XP[Home Edition/ Professional/Media Center Edition], Direct X 9.0 or Higher is required
CD-R, CD-RW, DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM, DVD±R DL discs	**CD-R** : LG, Mitsubishi Kagaku Media, Verbatim, Taiyo Yuden or TDK discs are recommended. **CD-RW** : LG, Ricoh, Mitsubishi Kagaku Media, Verbatim discs are recommended. **DVD-R** : Maxell, Mitsubishi Kagaku Media, Taiyo Yuden are recommended. **DVD-RW** : JVC, Mitsubishi Kagaku Media are recommended. **DVD+R** : Mitsubishi Kagaku Media, Verbatim are recommended. **DVD+RW** : Mitsubishi Kagaku Media, Verbatim are recommended. **DVD-RAM** : Maxell, Panasonic are recommended. **DVD+R DL** : Mitsubishi Kagaku Media, Verbatim, Ritek are recommended. **DVD-R DL** : Mitsubishi Kagaku Media, Verbatim are recommended.

* Compatibility problem in write/read function may occur with media depending on the media manufacturing quality.
* For DVD±R 20x, 22x support media: Mitsubishi Kagaku Media, That's.
* Upon the media condition or some of user's environment the maximum speed sometimes could not be guaranteed.

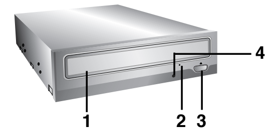
❏ Occasionally CD-R and CD-RW discs written by a CD-R/RW drive cannot be read by other CD drives*. These unreadable discs may need to be read using the CD-R/RW drive they were created with

* The disc written using the CD-R/RW drive might not be readable by CD-ROMs other than Multi-read compatible (UDF compatible) CD-ROMs
Multiread compatible (UDF compatible) CD-ROMs are:
1. CD-ROMs that can read low reflectance. 2. CD-ROMs that support Packet Write.

❏ **Please note:** Certain software (i.e. particularly those including Video playback) may require a considerably increased specification PC to give acceptable results. While this Super Multi DVD Rewriter can read DVD-video discs, decoding them to display on your pc's monitor requires separate MPEG decoding that is done by separate hardware (either an MPEG decoder card or MPEG decoding done by your video card), or separate software that you install to do MPEG decoding. For further details, refer to the documentation that comes with MPEG software.

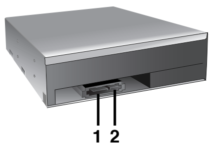
Location and Function of Controls

Front Panel



1. **Disc Tray**
2. **Emergency Eject Hole**
3. **Stop/Eject Button**
4. **Drive activity indicators**
   The LED used to indicate the operation of Super Multi DVD Rewriter.

Rear Panel



1. **SATA Power Connector (15 pin)**
2. **SATA Data Connector (7 pin)**

Installing the Drive

Before installing the drive, please note the following points.

- You will need the following:
  - A screw driver of a suitable size to fit the securing screws for the drive unit.
  - The manual for the computer, so you can find the mounting positions for the SATA cable.
- Turn off all peripheral appliances of the computer and the computer itself, and disconnect their power cords from the wall sockets.
- Discharge any static electricity on your person by touching the computer covers, etc.

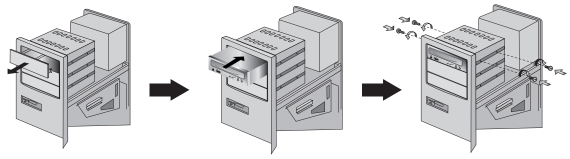
Removing the Computer Cover

Make sure all peripheral devices of the computer and the computer itself are turned off, and then remove the cover. Refer to the manual for the computer for details about removing the cover.

NOTE : There may be sharp edges inside the computer so take care to avoid injury.

Mounting the Drive

1. Remove the $5^1/4''$ drive bay panel from the computer. Refer to the manual for the computer for details.
2. Insert the drive unit into the bay. Do not apply excessive pressure to the cables inside the computer.
3. Secure the drive with the screws. If there is not enough space behind the drive, connect the SATA and other cables before securing the drive.



NOTE : This is a general installation guide. If your PC hardware appears different, please consult your hardware manual for installing peripheral devices.

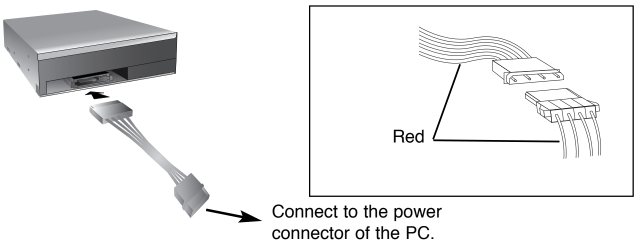
PC Connection

The Super Multi DVD Rewriter connects to the motherboard of the host computer using a SATA interface cable.

Connecting the SATA Power Cable

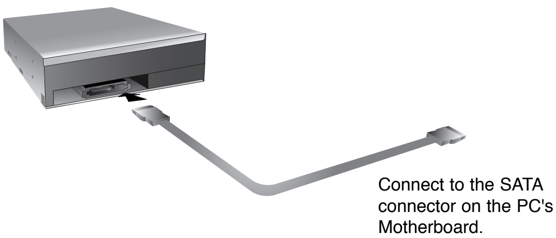
Connect the power cable so the projection of the cable connector side to come to the left side. Be careful not to connect upside down.

NOTE : Improper connection may damage the drive and void the warranty. Generally, the power connector can only fit one way.



Connecting the SATA Data Cable

Connect the data cable. Be careful not to connect upside down.



Device Drivers

When using Windows 2000 Professional/XP Home Edition/XP Professional/Vista, no special device driver is required. Your system, upon Power On and bootup after installing and connecting the new Super Multi DVD Rewriter, will recognize and load native software drivers automatically.

Please consult the following internet sites:
http://www.lgservice.com (then choose your country from the list)

For Windows 2000/XP/Vista Users

- In order to ensure normal drive operation, please check the following:
  - The drive is displayed in
    Windows 2000/XP : [Control Panel]-[System]-[Hardware]-[Device Manager]-[DVD/CD-ROM-drives]
    Windows Vista : [Control Panel]-[Device Manager]-[DVD/CD-ROM-drives]
  - 32-bit is displayed in [Control Panel]-[System]-[Performance]
- If the drive is not recognized by your computer, please check the following items.
  - If an ! indicator is displayed on the IDE controller in [Control Panel]-[System]-[Device Manager]-[Hard Disk Controller], you will need to contact your PC's manufacturer or the motherboard's manufacturer and get the appropriate IDE controller driver.
- Run **Add New Hardware** in Control Panel to let PC search again for new device.

Software

Install the appropriate CD Recording Authoring Software before using this unit.
* Please uninstall any previous CD burning software you may have loaded on your PC in order to prevent possible compatibility issues. Once you have installed the application software, you may (if you wish) begin to reinstall previous software, taking note for errors.
We recommend using the drive with the latest software as some problems encountered when using the drive can be solved by updating the software.

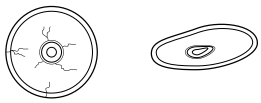
WARNING: Only drives bearing the logo *Compact Disc ReWritable Ultra Speed* can write or erase Ultra Speed CD-RW media.

Ultra Speed CD-RW Media may be recognized by the same *Compact Disc ReWritable Ultra Speed* logo on the disc label or packaging material.

Attempting to write to Ultra Speed CD-RW media using CD-RW drives NOT bearing the logo *Compact Disc ReWritable Ultra Speed* may result in data loss.

How to Use the Discs

When using CD-ROM discs, CD-R discs, DVD discs or CD-RW discs, don't attach any stickers or labels to the discs. It could cause read and write errors, but data on the disc may be lost due to damage to the disc itself.



The Discs in this unit operate at a very high speed! DO NOT use damaged, cracked or warped discs. The drive's optical unit may be damaged if they break.

DO NOT use non-standard discs. NON-standard discs may not play or store data properly.

Emergency Eject

This drive has a feature that allows the CD to be ejected manually if this becomes necessary such as failure of the drive or a power outage.

NOTE: Don't use this feature **except** in an emergency.

1) Turn the power to OFF.
2) Poke a fine-tipped object (such as a straightened heavy duty paper clip) into the small hole above the eject button. The front door will pop open and the disk tray will come partway out.
3) Pull the front door to open it all the way, then grip the disc tray between thumb and forefinger and gently pull it straight out.



NOTE: This feature is a last measure to be used only in an emergency.
Using it excessively will cause malfunction.

* If you cannot get a good grip on the disc tray with your fingers, use a steel binder clip or spring clamp to pull it out.

Troubleshooting

Before Requesting Service

Before calling for service, check this list.

- The drive doesn't have power.
  - Is the power supply cable from the host computer plugged in?
  - Is the Power Connector to the drive securely attached?
- The system doesn't start.
  - Are the power and SATA cables to the PC correctly connected?
  - Is the total length of the SATA cable 20 inches or less?
  - Is each connector completely attached?

    Other connections may have been knocked lose while installing the drive.
- Cannot Read or Write Discs.
  - Is the condition of everything else in the system (CPU, hard disc, and others) as it should be?
  - Does the CD or DVD disc have dirt or scratches?
  - Did a screen saver or other application operate while writing to the disc?
  - Is there enough free space on the CD, DVD and DVD-RAM disc?
  - Does writing fail even using the simulation test?
  - Is the disc loaded in the drive with the read/write surface facing the right direction? (label up)
  - Is the drive installed in the correct orientation?
  - Was the drive or disc moved from a low temperature environment to a high temperature environment? (There is a possibility of condensation on the lens in the drive or on the surface of the disc.)

When you call for service, be prepared to give as much information as possible of your system, environment, and the specific problem. (What happened? When? How long? What was going on? Were there any error messages displayed? etc.)

Please Note: Since this product supports Region Playback Control Phase II, a certain MPEG decoder card or Software without regional code setting may cause this drive not to read DVD-ROM discs. This Drive enables you to change the regional code up to 5 times.

Specifications

Items		CD/DVD/CD-RW	
General	**Supported Discs**	DVD-ROM(Single/Dual), DVD-RW, DVD-R, DVD-R DL, DVD+RW, DVD+R, DVD+R DL, DVD- RAM, CD-Digital Audio & CD-Extra, CD-Plus, CD-ROM, CD-ROM XA-Ready, CD-I FMV, CD-TEXT, CD-Bridge, CD-R, CD-RW, Photo-CD (Single & Multi-Session), Video CD, DVD-VIDEO	
	Disc Diameter	12cm/ 8cm (8cm disc can be used only with drive placed horizontally.)	
	Host Interface	Serial ATA	
	Read/Write Speed	**Write :** **DVD-R :** 2X, 4X, 6X, 8X, 12X, 16X, 18X, 20X, 22X **DVD-RW :** 1X, 2X, 4X, 6X **DVD+R :** 2.4X, 4X, 8X, 12X, 16X, 18X, 20X, 22X **DVD+RW :** 2.4X, 4X, 6X, 8X **DVD+R DL :** 2.4X, 4X, 6X, 8X, 10X, 12X, 16X **DVD-R DL:** 2X, 4X, 6X, 8X, 10X, 12X **DVD-RAM (Ver. 2.0 & Higher):** 2X, 3X, 5X, 6X, 8X, 12X **CD-R:** 4X, 8X, 16X, 24X, 32X, 40X, 48X **CD-RW:** 4X, 10X, 16X, 24X, 32X	**Read :** **DVD-ROM (Single/Dual)** : 16X/12X max. **DVD-R** : 16X max. **DVD-RW** : 13X max. **DVD+R**: 16X max. **DVD+RW**: 13X max. **DVD+R DL** : 12X max. **DVD-R DL**: 12X max. **DVD-RAM (Ver. 2.0 & Higher)**: 12X max. **CD-R/ROM**: 48X max. **CD-RW**: 40X max. **CD-DA(DAE)**: 40X max.
	Mounting direction	Horizontal/Vertical	
Performance	**Data transfer rate** ***Sustained**	CD-ROM : 7200 Kbytes/s (48X max) DVD-ROM : 22160 Kbytes/s (16X max)	
	***Burst(ATAPI)**	SATA Gen.1 1.5Gbps	
	Average Access Time (Random)	CD-ROM: 125ms (Typical) DVD-ROM : 145ms (Typical) DVD-RAM : 270ms (Typical)	
	Buffer capacity	2 Mbytes	
	MTBF	100000 Power On Hours (Duty Cycle 10%)	
Environmental Level	**When operating** **When not operating**	**Temperature**: 5 °C to 50 °C **Temperature**: -30 °C to 60 °C	**Humidity**: 15% to 85% R.H. **Humidity**: 10% to 90% R.H.
Electrical	**Power**	DC 5V, DC 12V	

* The drive's appearance and specifications may change without prior notice.

LG Electronics U.S.A. Inc.
1000 Sylvan Ave.
Englewood Cliffs NJ 07632
U. S. A.
or http://www.lgusa.com

LG Electronics Canada Inc.
550 MATHESON Blvd. East Mississauga.
Ontario L4Z4G3 Canada

LG Electronics Deutschland GMBH
Jakob-Kaiser-Straße 12,
D-47877 Willich, Germany

LG Electronics U. K. Ltd.
LG House, 250 Bath Road,
Slough Berkshire SL1 4DX
United Kingdom

Goldstar France E.U.R.L
Paris Nord II 22, Avenue des
Nations-B.P.50372 VILLEPINTE
95945 ROISSY CDG CEDEX France

LG Electronics Italia S.P.A.
Centro Direzione "IL Quadrate" Via
Modigliani, 20090 Segrate (MI) Italy

LG Electronics España
Complejo Europa Empressaries (Edif.Bruselas)
Ctra. N-VI 28230 Las Rozas Madrid Spain

LG Electronics Australia Pty Ltd.
2 Wonderland drive, Eastern creek, NSW
2766
or http://www.lge.com.au

LG Electronics Portugal S.A.
Quinta da Fonte – Edifício D. Amélia
Rua Vítor Câmara, nº2, Piso 2
2700-229 Paço d´ Arcos, Portugal
ou www.lge.pt

Please visit www.lgservice.com and install the program, "LG ODD Online F/W update." By using the program, you can automatically check the latest information about FirmWares and update the FirmWare.

Caution!

The disc rotates at high speed in the drive unit. Use of worn, damaged, or non-standard CD-ROM discs can adversely affect the drive and cause the disc to shatter or crush while in use. Disc crush can only occur when you use a damaged CD-ROM disc in the drive. It is an extremely rare occurrence, but there are steps which can be taken to prevent it.

Always check your discs before inserting them into the drive.

1. **Take care not to use worn, cracked, damaged, warped or poor quality CD-ROMs, as this may cause damage to your drive.**
2. **Check the clear plastic on the center of the disc, cracks here are the main cause of disc crush.**
3. **Do not play CD-ROMs which are a non-standard (I.e. non-circular)shape, such as heart shaped discs, or discs in the shape of a business card.**

How can you keep your discs from becoming damaged?

1. **When not in use, remove discs from the drive.**
2. **Keep discs in the packaging supplied with them and out of direct sunlight and away from heat sources.**

Excessive vibration or a sudden jolt to the drive during operation may cause a malfunction. Avoid exposing the drive to sudden changes in temperature as it may cause condensation to collect inside the drive.

P/NO. 3828HM1050H Ver. A